

The embodiment of the invention as claimed in Claim 14 is directed to a molding composition comprising the following components:

- I. from 40 to 80 parts by weight of a polyamide selected from the group consisting of PA 612, PA 1012, PA 11, PA 12 and PA 1212, and
- II. from 60 to 20 parts by weight of a flexible polymer whose main chains consist of carbon atoms, wherein the amounts of I and II in parts by weight total 100, and wherein the composition comprises not more than 2% by weight of extractables, measured by extracting the granules with hot 100 percent ethanol under reflux conditions, the tensile modulus of elasticity of the composition ranging from 200 to 950 N/mm<sup>2</sup>.

In another embodiment of the invention as claimed in Claim 18, a pipe is claimed whose interior wall structural component is comprised of:

- I. from 40 to 80 parts by weight of at least one polyamide selected from the group consisting of PA 46, PA 66, PA 610, PA 1010, PA 612, PA 1012, PA 11, PA 12, PA 1212, and PA 6,3-T, and
- II. from 60 to 20 parts by weight of a flexible polymer whose main chain consist of carbon atoms,

where the amounts of I and II in parts by weight total 100, and wherein the interior wall component comprises not more than 2% by weight of extractables, measured by extracting the granules with hot 100% ethanol under reflux conditions, the pipe being useful for the piping of aqueous, aqueous-alcoholic or purely alcoholic liquids.

The rejection of Claims 2, 4-12, and 17-18 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 5,472,754 (Douchet et al) in view of U.S. Patent No. 5,256,460 (Yu), is respectfully traversed. While the Examiner is correct that Douchet et al disclose a plastic

material hose for fluids used in motor vehicles, such as fuel or windshield washer liquid, and that Douchet et al disclose polyamides, what the Examiner omits is that the polyamides disclosed therein comprises the **outer** layer of a three-layer hose, wherein the inner layer is a **high-density polyethylene** layer. Douchet et al disclose that the high-density polyethylene is advantageous because it provides an excellent barrier to alcohol at low cost, it is an inert material with a much higher degree of crystallization than low-density polyethylene and therefore has an inherently more compact structure that is more difficult for alcohol and hydrocarbon molecules to penetrate, and it is easy to weld (column 1, lines 48-56).

Douchet et al is essentially irrelevant herein, since the presently-claimed invention requires that the innermost layer comprise a polyamide and a flexible polymer. Indeed, Douchet et al actually teach away from the presently-claimed invention, since there is no polyamide in the interior layer therein but rather, the polyamide is present in an exterior layer.

Yu does not remedy the deficiencies of Douchet et al. Yu discloses a polymeric blend for use as, for example, a fuel hose, comprising a copolymer obtainable from copolymerization of  $\epsilon$ -caprolactam and another particular monomer component, and a polyolefin polymer with functional group selected from the group consisting of carboxyl groups, esters, anhydrides and carboxylates. If one skilled in the art were to combine Douchet et al and Yu, the result would be a hose whose **outer** layer comprises the blend disclosed by Yu. Clearly, there is no suggestion in Yu to replace the high-density polyethylene inner layer with the blend of Yu.

For all of the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 14-16 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 4,554,320 (Reimann et al), in view of U.S. Patent No. 5,948,503 (Yamamoto et al), is respectfully traversed. Reimann et al disclose nylon molding materials having a high impact strength by combining with the nylon, a non-crosslinked copolymer containing three or more

components comprising ethylene, C<sub>2</sub>-C<sub>8</sub> alkyl (meth)acrylate, and a monomer possessing an acidic functional group or a latent acidic functional group (column 2, lines 45-62). While Reimann et al does discuss flexibility with regard to prior art nylon materials, nothing is disclosed regarding flexibility with regard to the invention of Reimann et al, and indeed, Reimann et al appear to be essentially exclusively concerned with the impact strength of their product. Yamamoto et al do not remedy the deficiencies of Reimann et al. The Examiner relies on Yamamoto et al for a disclosure of a tensile modulus of elasticity which the Examiner asserts is within the terms of present Claim 14 (column 17, lines 55-60). The tensile modulus of elasticity disclosed in Yamamoto et al relates to a fine fiber-reinforced thermoplastic elastomer composition prepared by mixing an ethylene-propylene copolymer as an elastic component, a polypropylene resin modified by a particular silane and peroxy compound as a polyolefin component, and nylon 6 resin modified with a particular silane as a polyamide component (column 16, line 61ff). The Examiner relies on this disclosure of Yamamoto et al as demonstrating that the above-discussed nylon molding material of Reimann et al inherently has the tensile modulus of elasticity disclosed in Yamamoto et al. This finding is clearly incorrect, since the particular materials used by Yamamoto et al are different from the materials in Reimann et al. Neither the elastic component nor the polyolefin component of Yamamoto et al overlaps with the non-crosslinked copolymer of Reimann et al.

For all of the above reasons, it is respectfully requested that this rejection be withdrawn.

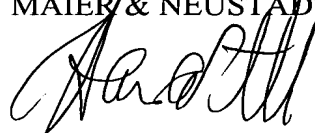
The rejection of Claims 18, 2, 4-12, and 17 under 35 U.S.C. §112, second paragraph, is respectfully traversed. Indeed, the rejection is now moot in view of above-discussed amendment. Accordingly, it is respectfully requested that it be withdrawn.

All of the presently-pending claims in this application are now believed to be in

immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



Norman F. Oblon  
Attorney of Record  
Registration No. 24,618

Harris A. Pitlick  
Registration No. 38,779



**22850**

(703) 413-3000  
Fax #: (703)413-2220  
NFO:HAP\  
I:\atty\HAP\93500144-am.wpd

**Marked-Up Copy**

Serial No: 09/442,756

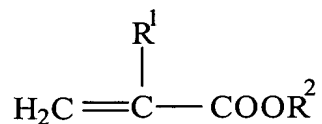
Amendment Filed on:

HEREWITHIN THE CLAIMS

--8. (Cancelled)

9. (Twice amended) The pipe as claimed in Claim 18, wherein the flexible polymer is selected from the group consisting of:

- a) an ethylene- $C_3$ - $C_{12}$ - $\alpha$ -olefin copolymer having from 20 to 96% by weight of ethylene polymerized with a  $C_3$ - $C_{12}$ - $\alpha$ -olefin selected from the group consisting of propene, 1-butene, 1-pentene, 1-hexene, 1-octene, 1-decene or 1-dodecene as the comonomer;
- b) an ethylene- $C_3$ - $C_{12}$ - $\alpha$ -olefin-nonconjugated-diene terpolymer containing from 20 to 85% by weight of ethylene and polymerized with a  $C_3$ - $C_{12}$ - $\alpha$ -olefin selected from the group consisting of propene, 1-butene, 1-pentene, 1-hexene, 1-octene, 1-decene or 1-dodecene and up to not more than about 10% by weight of a nonconjugated diene selected from the group consisting of bicyclo[2,2,1]heptadiene, 1,4-hexadiene, dicyclopentadiene and 5-ethylidenenorbornene; [and]
- c) an ethylene-acrylate copolymer containing from 50 to 94% by weight of ethylene and from 6 to 50% by weight of an acrylate of the formula:



wherein  $R^1 = H$  or  $C_1-C_{12}$ -alkyl and  $R^2 = C_1-C_{12}$ -alkyl or an alkyl group which carries an epoxy group, and from 0 to 44% by weight of another comonomer selected from the group consisting of a  $C_3-C_{12}$ - $\alpha$ -olefin, styrene, an unsaturated mono- or dicarboxylic acid, an unsaturated dicarboxylic anhydride, an unsaturated oxazoline and an unsaturated silane selected from the group consisting of vinyltrimethoxysilane, vinyltris(2-methoxyethoxy)silane, 3-methacryloxypropyltrimethoxysilane and 3-methacryloxypropyltriethoxysilane,

d) styrene-ethylene-butene-styrene block copolymers.

e) polyalkenylenes, and

f) LDPE.

18. (Amended) A pipe whose interior wall structural component is comprised of:

- I. from 40 to 80 parts by weight of [a] at least one polyamide [is] selected from the group consisting of PA 46, PA 66, PA 610, PA 1010, PA 612, PA 1012, PA 11, PA 12, [or] PA 1212, [or the] and [amorphous copolyamides] PA 6,3-T[, blends of polyamides, or the corresponding copolyamides], and
- II. from 60 to 20 parts by weight of a flexible polymer whose main chain consists of carbon atoms,

where the amounts of I and II in parts by weight total 100, and wherein the interior wall component comprises not more than 2% by weight of extractables, measured by extracting the granules with hot 100% ethanol under reflux conditions, the pipe being useful for the piping of aqueous, aqueous-alcoholic or purely alcoholic liquids.

Claims 19-29 (New).--